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THE BEAVER IN NORWAY.

BY ALFRED HENEAGE COCKS, F.Z.S.

LITTLE or no accurate information is forthcoming about the present distribution of Beavers in Norway. Lilljeborg, in 'Sveriges och Norges Däggdjuren,' published in 1874, enters at some length—about 2½ large 8vo pages—into the question, both as regards Norway and Sweden, and quotes from Nilsson's 'Skandinavisk Fauna' and from the 'Svenska Jägareförbundets Nya Tidskrift,' volumes for 1865, 1867, 1869, 1870, and from an article by Mr. Robert Collett in the next volume. Beyond the information supplied by these Scandinavian writers, I know of no tolerable account of the distribution of the Beaver in the Scandinavian peninsula.

Blasius, in his 'Säugethiere Deutschlands,' published in 1857, says, with great recklessness (p. 407), "In Lithuania and Poland, Norway, Sweden, and North Russia, they are, however, existing in great abundance (*häufiger*)."
Giebel, in 'Die Säugethiere,' published two years later, says in nearly the same words (p. 619), "In Norway and Sweden, Poland and Russia, on the contrary [it is found] abundantly" (*häufiger* being again the word used). It is fair, however, to state that until about twenty-five years ago Beavers were apparently much more widely distributed over Scandinavia than at present. I was told last autumn that it is about twenty-five years since the last Beaver was killed in the neighbourhood of the Osterdal, Norway, in the Slem Aa, a tributary of the Rena Elv; and Lilljeborg (p. 362) quotes to the same

effect from Hallgren (Svensk. Jäg. Nya Tidskrift, 1869, p. 52), that "twenty to thirty years ago it was found commonly in all fjeld districts; beaver huts and dams are still not rare by water-courses in the fjeld districts." The former existence of this animal to the west of the parish of Lom, Gudbrandsdalen, Norway, is shown by the names "Bøeverdal" and "Bøvertun Sæter." I am not aware of any book in English which gives any information on the subject.*

On July 24, 1877, I visited by boat a beaver-lodge at S—,† the only one near the house where, by the kindness of Mr. G., the owner of the land, I was staying. This lodge being of old construction, it was difficult to make out exactly how much of it was really the work of the Beaver, all one could see being a few holes in the bank of a large island of several acres extent in the middle of the river. I believe, however, the state of affairs is this:—A pair of Beavers make a house of logs and sticks at the side of an island, and by degrees, in the floods, earth gets washed all over it and trees grow on it, so that it eventually gets joined on to, and made part and parcel of, the island, making it almost impossible to tell how much is natural.

We found plenty of Beavers' "runs" from the water well up on to the island, and plenty of tracks, which, considering it had rained hard all the previous night, could hardly have been older than that morning. There were also plenty of twigs lying about which they had bitten off the trees, and an alder cut down by them, about as big round as the lower end of one's thigh. Altogether there was a great deal of work for two animals, the only two, it was said, in that immediate neighbourhood. At one place at the bottom of the water could be seen a large accumulation of barked branches, which I was told was the remains of an old lodge. My knowledge of Norse was at that period very limited; but if I understood rightly, the Beavers construct lodges of branches each spring, which are sooner or later in the season destroyed by the timber, which, when felled,—according to custom in Norwegian forests,—is dragged to the nearest point

* Some brief remarks on the subject will be found in Bowden's 'Naturalist in Norway.'—ED.

† I shall, I hope, be excused for not giving in full the names of the localities. The first alluded to, however, is the well-known Beaver colony mentioned by Lilljeborg.

of the river, and left to find its way down to the coast. Naturally, when a few logs get together, they carry all before them, not even sparing so interesting an object as a Beaver's lodge. To this cause was attributed the non-increase of the animals. I had intended to go up again in the boat that night, to wait out in the hope of seeing something of the Beavers themselves; but the night was so pitch-dark and overcast that it was useless to attempt it. The next morning I went up the river again by boat, and saw some lodges at some little distance from that inspected the previous day, which were inhabited, I was told, by two pairs of Beavers.

There were said to be ten inhabited lodges—*i. e.*, ten pairs of Beavers—about seven English miles lower down the river, making (if I understood correctly), together with the three pairs whose lodges I visited, a total of twenty-six Beavers in this river.* We found a birch tree cut down where it was about seven inches in diameter, at a height of five feet eight or nine inches from the ground. This must have been done, I suppose, when the snow lay some little depth.

Last year while in Norway I heard of a new Beaver "colony," which had been noticed the previous year (1878) for the first time near P——, in a small river, the R—— Bøk. On visiting the spot, I found that the Beaver or Beavers (it is not known which) lived in the river-bank, to which there was access by two holes, like magnified water-voles' holes, close together, just above the surface of the water. The bank on that side of the stream rose steeply to a height of about twenty feet, and was thickly wooded; but it seemed an unlikely place for Beavers to take up their abode in, as the stream was only a "beck," quite narrow, and the opposite bank was flat meadow land, forming part of a regular farm, the house not being much more than a quarter of an English mile distant, and it was altogether quite a tame locality. The owner of the farm showed me where the original holes had been on the meadow side of the Bøk, which he had stopped up for fear of his cows breaking through. In one of them, he said, he had found a small fish, which he was fully

* It is, of course, natural to suppose that each—or at least most—of these thirteen pairs would have young at the time of my visit; but as I was particularly told that the numbers do not increase, but rather the reverse, it would not do to allow for them in endeavouring to make out a census.

persuaded had been brought in by a Beaver for food! He seemed anxious to shoot them on account of the amount of wood they destroy, although all the wood being on the opposite bank of the beck, and therefore not on his land, that could not much matter to him. I did my best to impress him with the idea of their rarity and interest, but failed to enlist his sympathies. On the opposite side plenty of their work might be seen; dozens of trees cut down over some width of ground, and plenty of "runs" up the bank. I found a birch tree thirty-six inches in circumference cut down by them. The actual cut was about eighteen inches long, the bark being taken off for over two feet. Another tree which they had cut down was twenty-nine inches in circumference, and a third twenty-eight inches.

The Beaver or Beavers, it seems, came here in the summer of 1878, probably (the farmer told me) in June or July, and appear to have migrated from a place (T—), about twenty-four English miles as the crow flies, where, I was told, on what I believe to be unquestionable authority, a colony still exists, but I could learn nothing about its numbers, and had not time to go there to see for myself. I have also heard of the probable existence of a fourth colony in Norway (S—), and I hope and believe it is not unlikely that another small colony or two may yet exist in that country, and also perhaps in Sweden.

That this animal, however, is very rare is sufficiently proved by the fact that the skeleton is a desideratum, I believe, in all the Scandinavian Museums,—I think Lund has an imperfect example,—although they all have old stuffed skins, in each instance, I think, from S—, the place here first mentioned.

ON THE RECENT OCCURRENCE OF THE PINE MARTEN IN LINCOLNSHIRE.

BY JOHN CORDEAUX.

IN addition to the captures, in this county, of the Pine Marten already recorded, I have notes of several other occurrences, an enumeration of which may interest zoologists. I am also in possession of information from correspondents, and orally, which leave it beyond doubt that the Marten, although becoming scarce, is still to be found in certain haunts both in North and Mid-Lincolnshire. As it is probable any mention of its present habitats would only tend to hasten the extinction of the species, I must be excused for not mentioning the exact localities where it may still be found.

It is satisfactory, however, to know that as there seems an increasing disposition, in some cases, on the part of our large landed proprietors rather to preserve than exterminate, we may hope that many years will elapse before we hear of the death of the last Lincolnshire Marten. That it has not become extinct is due to the comparatively undisturbed nature of its old haunts. Had the preservation of game been carried to the same excess which we know to be the case in other counties, it would probably long ere this have disappeared along with the Badger and Otter, Buzzard and Hobby, which, although few and far between, still linger on—the last representatives of the old Lincolnshire fauna.

There are great woodlands in Mid-Lincolnshire, and wild and secluded valleys amidst the wolds, distant from any railroad, where, unless we except a higher cultivation, the natural features have continued much what they are since the Saxon and Danish invasions. A friend, a great lover of our county, recently sent me some lines descriptive of one of these secluded spots in the heart of the wolds. They are so true to nature that I venture to quote some portion:—

“ ’Tis hither many an exile flies
Before the march of man ;
Here many a bird and beast defies
Grim cultivation's ban ;

'Tis here by night the Wild Cats prowl,*
 'Tis here the Badger hides;
 Here flits at eve the horned Owl,
 And Hobby fearless bides.

" 'Tis here I've seen the Buzzard swoop,
 Where roams the tender brood;
 'Tis hither Geese in legions troop
 From distant seas for food;
 'Tis here the Wild Swan's note is caught
 Soft on the frost-clear air,
 And here the Marten-cat has sought
 A last precarious lair."

When the Dane, discarding his piratical life, turned peaceful colonist, there arose on the wold slope many a lonely "bye" between the forest land below and the rolling down above—downs quite unenclosed, and covered with a thin coat of ragged turf, interspersed with patches of yellow gorse or purple heather, or rough with the coarse tussocks of the barren brome grass. In these days the Marten must have been a very common denizen of our Lincolnshire woodlands, and there can be no doubt that the few which remain are descendants of a very ancient race indigenous to the county long before Saxon or Dane, Roman or Coritani were heard of.† Gone are the ancient pine forests, not a relic left; gone also are the great woodlands of beech and oak; gone are the fenlands, beautiful after their kind in plant and animal life; gone the wide waste of the wold, the home of the Bustard and Stone Curlew; fen and wold alike now brought to the highest perfection of culture; and yet amid all these changes, and in spite of centuries of persecution, the little Marten-cat has succeeded in holding its own—a striking instance of the survival of some species under the most adverse circumstances.

Recent notices of the Pine Marten in Lincolnshire already put on record are as follows:—

In 'The Naturalist,' vol. v., 1855, Mr. John Brown, at that time taxidermist at Louth, states that on the 6th November,

* There are cats in some of the great woodlands of Lincolnshire that have for generations bred wild. They are said to be much broader in the head and shorter in the tail than the domestic race from which they have sprung.

† To the Saxons the Marten was familiar as the *Mearth*, or *Mærth*, to distinguish it from the *Fil-mærth*, Fomart, in contradistinction to which we find the form still known as the Sweetmart in the wilds of Cumberland.

1854, he had a fine specimen of the Pine Marten brought to him for preservation, caught the previous day in a trap on the estate of Capt. Fox, of Girsby, about seven miles from Louth. He also mentions a second example, on the authority of the Rev. George Jackson, of Reston, taken some years previously in Burwell Wood, about four miles from Louth.

In 1865 one was trapped in a plantation at Riby, near Grimsby, on Col. Tomline's estate, as recorded by me in 'The Zoologist' for 1866 (p. 242); another had been trapped in the same locality a short time previously.

One is recorded in the same Journal for 1877 (p. 251) by the Rev. A. P. Morres, shot in the South Wood, at Stainfield, near Wragby, in the winter of 1871-72. This wood is five hundred acres in extent, and was known formerly as a famous haunt of the Marten-cat.

Again, in 'The Zoologist' for 1879 (p. 420), a female Marten-cat is stated to have been trapped in that year on the property of Mr. Rowland Winn, at Appleby, near Brigg.

So far as I am aware, these comprise all the recent occurrences on record of the Marten in Lincolnshire, in addition to which I have the following notes:—

In 1858 a Marten was caught in Well Wood, near Alford; this came into the possession of Mr. Hibbert, innkeeper, of that place, who subsequently put it into a sale. I have not been able to trace it beyond Mr. Hibbert's possession.

In the winter of 1874 one was trapped in a plantation called the "Suscoms," on the hillside at Worlaby, near Louth. The stuffed skin is now in the house of Mr. Alders, of Worlaby. This specimen was thought to be a wanderer from Burwell Wood, at no great distance. This wood, one of 400 to 500 acres, is of great antiquity, a remnant of that forest belt which at the time of the Danish settlement fringed both the northern and southern slopes of the wolds from Spilsby to Barton-on-Humber. I am told that up to 1874 or 1875 the Pine Marten had occasionally been found in Burwell Wood. A correspondent has told me that seven or eight years ago he trapped three Martens near * * * Wood, and says that at the present time he knows where there are a few left, and hopes this spring to be able to get some young ones from the nest to be reared as pets. Subsequently he told me of two other localities where the Marten may be found.

I have an extract taken from the diary of an old sportsman, still living, in his day as good a man as ever crossed Lincolnshire:—"March 23, 1825. Met Sir Richard Sutton's hounds (the Burton) at Newbold Common, near Wragby. Found and ran into a Marten-cat." I have been told of a similar case when some years since the hounds ran down a Marten in Tumby Wood, near Horncastle, the little animal never attempting taking to a tree, but was fairly "run into."

Mr. Adrian, of Lincoln, recently told me that nineteen years ago, during the April Fair week, in one of his bird-nesting excursions, he was passing through Branston Booths Wood. There was a very large oak tree, the trunk and lower branches of which were completely shrouded in woodbine, forming a dense bushy retreat. On striking this, a Marten dashed out and was instantly at the tree top, where it sat behind a branch, with outstretched neck, peering down and intently watching every motion. His first shot cut the branch in two, and brought the Marten tumbling through the tree, wildly clutching at the branches and endeavouring to gain a fresh foothold. It struck the ground with such force that Mr. Adrian thought all life must be knocked out of it; but no such thing, the little animal was off in an instant through the dense undergrowth. Borrowing a farmer's dog, he shortly returned to the place, and after a most exciting hunt succeeded in tracking it to a high tree on the opposite side of the wood, where a second shot and a worry from the dog ended its career. It was a fine old male, and the only Marten this indefatigable naturalist has seen alive during his many wanderings in our Lincolnshire woodlands. On May 7th, 1870, he had a Marten-cat sent him for preservation, taken in a wood near Horncastle; and in the spring of 1874 received four old ones, all from the same locality—a wood near Bardney. About four years ago he bought one from a carrier which was captured near Wragby. Since this he has only had one example, but neglected at the time to make a note of the locality and date.

Since writing the above I have received further notes of occurrences of the Marten-cat in Lincolnshire extending over twenty years, the most recent relating to one captured about a year ago on the estate of Mr. Heneage, at Hainton, near Wragby. I may add that in every case in which I have

had an opportunity of examining the skins of Lincolnshire Martens they have belonged to the yellow-breasted species, *Martes abietum*.

This, for the present, must close my notice of Lincolnshire Martens.

[The colour of the breast, it would seem, cannot now be relied upon as a mark of specific distinction, *cf.* 'Zoologist,' 1879, p. 441. It is very desirable that wherever practicable the dental characters pointed out by Mr. Alston should be looked for and reported.—ED.]

ORNITHOLOGICAL NOTES FROM NORTH LANCASHIRE.

By W. A. DURNFORD.

THE following notes, made during the last twelve months, though they contain no startling announcements of the occurrence of new or rare species, and must, I fear, be termed rather commonplace, may possibly prove of interest to some of the readers of 'The Zoologist.'

The year 1879, in this as in most other parts of England, was a most disastrous one for the birds, and we can only hope that it will be long before we experience a similar season. The intense severity of the winter of 1878-9, followed by a wet and inclement summer, told its tale even on the shore-birds and wildfowl, though these were naturally far less affected by the weather than the inland species; and even if the winter we have just passed through cannot be said to have rivalled in severity its immediate predecessor, yet the average temperature was considerably below that of other seasons, and the mortality amongst the weaker varieties of birds has been very considerable. It is rather remarkable that the birds which seem to have suffered most are some of those which hail from more northern regions than our own, and might be expected to be able to withstand a large amount of cold, *viz.*, Fieldfares and Redwings. The latter in particular were terribly affected by the frost, and during January and February I came across numbers either dead or so weak as to be scarcely able to fly. Blackbirds and Thrushes, as well as Finches and other small birds, also fell victims in large numbers to the inclemency of the season, and such was the devastation created

in the more exposed portions of the district that on several occasions last winter, during a walk of ten miles amongst the fields and lanes of Walney Island,—where small birds as a rule are fairly plentiful,—with the exception of the semi-domestic Sparrow, I did not meet with a perching bird of any description, all having either perished or migrated to more sheltered regions. At the same time Larks, Starlings and Finches, and even an occasional Rook, might be seen searching for food amongst the snow in our leading thoroughfares; whilst in the adjoining shops the poulterers exhibited for sale unusual quantities of half-starved Ducks, Plovers, Snipe, Woodcocks, and small birds of all sorts.

In the midst of such wholesale destruction it is pleasant to be able to record that in no previous winter, to the best of my belief, has the system of throwing out a daily supply of scraps, for the benefit of the hungry birds, been so widely adopted by the occupiers of country houses in this neighbourhood as during the past season; and I feel sure that to this cause alone may be attributed the preservation of hundreds of our feathered friends. On February 20th I happened to be present at one of these bird banquets, and could not help being amazed at the way in which the various species came flying in from all quarters as soon as the food was thrown out. The Rooks, in particular, created much amusement by the longing and yet undecided manner in which they eyed the feast from afar, half afraid to approach, until, their appetites overcoming their shyness, they would make a sudden dash and carry off the largest lump of bread which they could seize to a place of safety. On the other hand, the Tits exhibited extraordinary boldness, caring apparently for no one, and showing a partiality for old bones and fragments of meat.

Partridges in this neighbourhood did better last spring than was the case farther south, owing probably to the fact of their nesting, as a rule, on high ground out of reach of floods; numbers, however, fell victims to the frost, and it will take some years to make up the loss. Grouse do not appear to have suffered at all, and Pheasants—thanks chiefly to the artificial protection afforded them—did not take much harm.

Taking my notes in chronological order, I find that one of the first entries for the year 1879 relates to Windermere Lake. During the latter portion of January this magnificent sheet of water was frozen over from end to end, and skaters were able to

enjoy the unusual and pleasurable excitement afforded by a ten-mile spin without a break (the ferry excepted), amidst some of the finest scenery which our island affords. As might be expected, the wildfowl, which are generally to be found upon the lake, were considerably inconvenienced by the ice, and were under the necessity of confining themselves to the small pieces of open water which, from some unknown cause, always exist on Windermere, no matter how severe the winter may be. For some days one of these open spaces was frequented by a flock of Wild Swans; and on one occasion, by keeping under the shelter of a rocky islet which lies off the mouth of Cunsey Beck, I was able to skate up to within twenty yards of a flock of Widgeon which were peacefully disporting themselves in a hole in the ice, which, sad to relate, had been made by two unfortunate men who had been drowned there the previous day. Several other species of Duck frequented the lower lake, and on the 25th I saw a couple of Little Grebes diving about near Belle Grange in a patch of open water which was frozen over the same evening. All the other wildfowl were, however, far outnumbered by the Coots, and a more amusing sight could scarcely be imagined than a flock of these ungainly birds sprawling over the ice, vainly endeavouring to make their way across the glassy surface in their search for open water and fresh feeding grounds.

Throughout February and March the cold still continued with more or less severity, and on the 22nd of the latter month the ice on a tarn up in the hills showed no signs whatever of giving way. Nevertheless evidences of spring were at hand. On March 10th, considerably later than usual, the Black-headed Gulls had donned their summer plumage; by the same date numbers of Chaffinches, all cock birds, had reached their summer quarters. On the 16th the Rooks were building at Furness Abbey, and the Jackdaws were taking a preliminary survey of their nesting-places amongst the venerable ruins; whilst, ten days later, as already recorded in 'The Zoologist' (1879, p. 488), a Raven's nest was found, and, I regret to add, five eggs on the point of hatching were taken amongst the rocky slopes of Skiddaw.

Notwithstanding, too, the weather, the summer migrants appeared with their accustomed regularity and in fair numbers. The first two Swallows were observed at Barrow on April 12th; two days later a Wheatear had found its way to Walney Island.

On the 25th the Cuckoo was calling vigorously at Kirkby, and was followed on the 29th by the Landrail, the latter being unusually abundant last summer in this district. During the last week in April considerable interest was created by a Blackbird which frequented a wood about four miles from Barrow, and which was in the habit of amusing itself and all who heard it by imitating, with amazing accuracy, the crowing of a bantam cock.

Paying a visit to Walney Island on May 10th, I found the sandhills at the south end well occupied by their summer tenants. The Black-headed Gulls, a fresh colony of which was established this spring, had just commenced laying, as had also two or three pairs of Oystercatchers, whilst the Ringed Plovers had been already sitting for some time. Stock Doves were more plentiful than usual, and one had that morning been captured by the watcher on its nest in a rabbit-hole. Altogether I counted six or seven pairs on this occasion, and found three nests, two of which were quite out of reach. About a dozen Sheldrakes were hanging about the warren and adjoining shore, but I could not ascertain whether they had yet laid. On May 17th I again visited the island, which I need scarcely remark possesses an irresistible attraction for the ornithologist, and had the pleasure of finding, by the merest chance, a Sheldrake's nest containing sixteen eggs. I was attracted to the hole by a white feather lying on the sand, and found the nest within three feet of the entrance, the eggs being deposited in a most delicious bed of down. As the old birds were flying round in a state of great anxiety, I did not stop long in the locality. I was rather surprised to-day at observing a flock of not less than three hundred Oystercatchers standing together on a sandbank, and taking apparently no interest in their companions, which were engaged in nidification close by. Dunlins, in full summer plumage, were also fairly common. At the same time, amongst the numerous Terns which were wheeling about overhead, and which had not yet laid, I was glad to be able to distinguish at least three pairs of Sandwich Terns (*Sterna cantiaea*), a species which hitherto has not been known to breed at this end of the island, but a colony of which exists at the north end, about six miles distant. It was not, however, until the following Saturday (May 25th) that I was shown two nests of this bird, each containing a couple of eggs, which had been first discovered by some boys from a neighbouring farm. The name given by the watcher

to these interesting visitors—which will, I trust, increase and multiply in their new home—was, as near as I could make out, “Kirk-” or “Kek-Swallows.”

June 7th found me on the Cumberland coast, a few miles south of St. Bees Head. Here, as on Walney Island, Black-headed Gulls, Common and Lesser Terns, Oystercatchers, and Ringed Plovers, as well as Stock Doves, Wheatears, and Pipits, were as numerous as in previous years. A few Snipe were also nesting in a neighbouring marsh. It is perhaps worth noticing that whilst the nests of the Common Tern were scattered about all over the sandhills and adjoining beach, those of the Lesser Tern seemed to lie in small colonies amongst the shingle. Thus I found, in a space not more than a hundred yards square, no less than twenty-five eggs of the latter, no nest containing more than a couple. The Sheldrakes, which nest in large numbers hereabouts, were just hatching, and I observed four broods of nine, six, eight, and eleven, respectively, on the lower portion of the River Irt.

A month later (July 5th) the young Sheldrakes were still enveloped in down, but were able to run with great speed. On being pursued at low tide they took to the sandhills in preference to the water, nor was it at all an easy matter to overtake them. Being anxious to try and rear a few, I took home half-a-dozen with this object; but, though they fed well, half of them died within a fortnight, and the survivors escaped a day or two later, and were no more seen.

On July 12th I once more wended my way to Walney Island, and on reaching the sandhills found that the Gulls had nearly all gone. The Terns were beginning to fly, though there were still a few recently-hatched young ones about, as well as some fresh eggs. The wet weather of the last month seemed to have had a bad effect on the gulls, as well as on the young rabbits, as large numbers of both were lying dead in the hollows amongst the hills. A few old Sheldrakes were visible on the mud, but I was unable to distinguish any young birds of this species. Curlews were particularly numerous, having apparently returned from their breeding haunts inland.

Passing over the next two months, during which I recorded nothing that is worth repeating, I find a note to the effect that six House Martins were seen on Walney Island on October 5th, and remained in the same locality for several days. About the

middle of this month the usual immigration of Short-eared Owls took place, and on the 25th I put up a flock of eight amongst the sandhills. Happening on this occasion to fall in with my friend the watcher, I was particularly requested to kill all the Owls I could, as they preyed upon the rabbits. I need scarcely say that I did not comply with his request, feeling confident that it is the abundance of mice alone that attracts these interesting birds to the locality. On the same day I noticed a single Wheatear, which seemed to have been deserted by its companions.

A few days later, whilst out fishing in a small yacht, I came to the conclusion that sea-birds were more plentiful than usual this year. In the course of two or three hours we observed some hundreds of Razorbills, Guillemots, Kittiwakes and Scoters, as well as a few Gannets and larger Gulls; but, though I kept a careful look out on this, as on all other occasions, I was unable to detect any of the Skuas of which in some localities there has been of late such a remarkable influx.

During November the only birds worth noticing which came under my observation were four Red-breasted Mergansers, shot on the channel between Walney and the mainland, and a couple of Dippers procured in Cumberland. The gizzards of the latter proved on dissection to contain numerous remains of minute beetles, intermixed with some fibrous material, apparently of a vegetable nature. By the end of this month winter had set in with a severity which threatened to equal that of 1878-9. Ducks and other wildfowl driven from inland waters by the frost, and rendered comparatively tame from the same cause, were plentiful on the sea-coast.

On December 2nd sixteen Swans were seen and shot at by a local gunner as they flew down the channel between Barrow and Walney Island. The following day nine Geese, probably Bernicles, were observed in the same locality, and several of the latter species were procured during the next fortnight. Golden Plovers appeared about the middle of the month in unusual numbers, and, what was somewhat remarkable, three Sheldrakes were trapped on Walney in one night. Before Christmas the inland species of birds were reduced to almost the same straits as they had been at the commencement of the year, and flocks of Larks, Wagtails, and Starlings might be seen feeding amongst the snow with the Sparrows in the streets of the town.

ORNITHOLOGICAL NOTES FROM DEVON AND CORNWALL.

By JOHN GATCOMBE.

NOTWITHSTANDING the severe weather of the past winter some of the sea birds assumed their spring or breeding plumage unusually early. On January 5th I examined a Common Guillemot in full breeding dress, so far as colour was concerned, though many of the new feathers were perhaps not quite so long as they would have been had the bird been obtained a little later, their bases being still enveloped in their blue cases; but on January 16th I met with another in quite a perfect state. Razor-bills and Cormorants were also undergoing change, but were not so far advanced. By the 21st Herring Gulls were uttering their spring cry, but I do not think had yet attained their breeding dress. A Slavonian Grebe, Purple Sandpiper, Turnstone, and Common Snipe were sent from Looe for preservation, the Snipe being supposed to be the first ever shot or seen on Looe Island. I also examined a Crested Grebe, killed on the Cornish coast, the stomach of which contained the remains of fish and a kind of coralline mixed up with the usual quantity of feathers. Grebes of all kinds are, I am sorry to say, getting very scarce, and only make their appearance during very severe weather. In our markets I observed large numbers of Wild Ducks, Widgeon, Teal, a few Brent Geese, and some Redshanks. The last-named birds have become regular winter residents in this locality. Our birdstuffers received some immature Goosanders, Red-breasted Mergansers, and a Northern Diver, the last named unusually scarce last winter, and the same may be said of the Red-throated Diver, which is becoming more uncommon every year.

On January 24th, wind east, with snow, and very cold, I visited Brent, about sixteen miles from Plymouth, where I met with the only Fieldfare I had seen for the season, and a few Redwings, which were also the first I had seen, although during the severe cold of last winter the towns were swarming with them. The scarcity of these common winter birds has, I believe, been remarked throughout the United Kingdom. Lapwings were very numerous and remarkably tame, and I was pleased to see several Dippers and Grey Wagtails by the sides and on the large stones in the River Avon.

On January 28th, during hard frost, the mud-banks of the Laira, near Plymouth, were covered with hundreds of Gulls, chiefly *Larus ridibundus*, with a sprinkling of Herring Gulls, Common Mews, and a dozen Herons; but there seemed to be an entire absence of the Sandpiper and Plover tribe. Rooks and Starlings were in abundance, eagerly searching among and turning over the seaweed all along the shore. A fine old male Cornish Chough was brought to a Stonehouse birdstuffer; a great pity it should have been killed, but some of these scarce birds are, I am sorry to say, destroyed every season. A curious light variety of the common Wild Duck was sent up from Scilly, and considered a great rarity. It was almost white, with the brown markings showing very faintly, and the front of the neck and lower parts of a beautiful buff, similar to that of the male Goosander, but the speculum on the wings was of the usual dark violet or purplish blue, forming a marked contrast to the rest of the plumage. I had great difficulty in persuading the birdstuffer that it was only a variety, although certainly a very pretty one.

On February 17th two Red-necked Grebes were bought in the market, and, on examination, I found their stomachs to contain small fish, portions of crabs, sand, and a great quantity of feathers; but I am sorry to add that the skins of these scarce birds were cut up for the purpose of decorating ladies' hats. A Little Auk was taken inland, near Mevagissey, on the Cornish coast, and an immense flock of Gannets were observed in the channel. The markets at this date were unusually full of Lapwings and Wood Pigeons; some of the Lapwings were beginning to assume the black throat. The harbour and sound were also full of Kittiwakes, and many Great Black-backed Gulls were in full summer plumage.

On February 20th I watched a fine old Cormorant close in shore, and noticed that it was in full breeding-dress, with good crest, hoary neck, and a white spot on each thigh. Shags were in the same forward state. On the same day I examined the largest Guillemot I think I ever saw. It weighed two pounds eleven ounces.

My friend Mr. Clogg, of Looe, has kindly furnished me with the following interesting notes:—"When standing on the bridge, during the cold weather of February, I saw on one

occasion, in the mill-pool, fourteen Little Grebes in close company—so close, indeed, that they might have literally been covered with a sheet. I watched them for some time through a glass, but did not see one of them dive. A short time since a Cormorant passed over my head and settled in the mill-pool, the water at the time, I should think, not two feet in depth at the deepest part. It immediately began to feed, and I will venture to say that within ten minutes it had captured and swallowed no less than three flatfish (one of considerable size) and two green crabs, all of which must have been alive in the stomach at the same time. As soon as it had completed its meal it went off again to sea."

Mr. Clogg also informed me that the Herons are again breeding in Trenant Wood at Looe, and that he had during the previous month seen three pairs nesting there. On the 17th of March, which he considers rather a late date, he saw a large flight of Lapwings, consisting of some hundreds. These birds seem to have been very plentiful last winter, especially in Ireland, where Mr. Robert Warren speaks of them, in the last number of 'The Zoologist,' as "even more so than in the great Lapwing year of 1877."

On March 2nd a Puffin was brought to one of our birdstuffers, still in winter plumage, with dark bill and cheeks, but whether this was a spring arrival or a bird which had remained with us during the winter I am unable to say. Its stomach was empty. By the 7th *Larus ridibundus* had assumed its dark head, and on the 11th Wheatears had made their appearance in this neighbourhood. I observed the Chiffchaff on the 17th, and also the Ring Ouzel. The Channel at this date was full of Razorbills, Guillemots, and Gannets, and a fine Pomatorhine Skua was obtained, the latest I heard of last season. It was in moult, and would soon have attained its full breeding-dress. A short time previously a male Red-breasted Merganser was sent up from Looe, and I found its stomach crammed with atherines or sand-smelt (*Atherina presbyter*), and blennies, some of which were nearly four inches long. Strange to say, this was the first adult Red-breasted Merganser I had ever seen killed in Devon or Cornwall, although the young are frequently met with during severe weather, and even in comparatively mild seasons.

On March 29th a flock of about thirty or forty Siskins were

seen on the larches in Bickleigh Vale, and four were obtained; their stomachs were full of insects. I heard from a friend in Ireland that Siskins were plentiful in the County Armagh, where they sometimes breed. In my last notes (p. 47) I mentioned that a large number of Long-eared Owls had been received by our local birdstuffers, and a short time since I was told by a clergyman that a flock of above thirty had been seen in Sheviock Wood, near St. Germans, Cornwall, at this date. Lesser Black-backed Gulls were congregating in pairs, preparatory to the breeding season, all in full plumage, and making a great noise.

On April 6th an adult Buzzard was brought to one of our local birdstuffers. Its plumage was rather worn and much bleached by exposure to the weather, but there were new feathers of a fine fresh brown appearing in different parts of the neck and back. I have kept Buzzards in confinement—two of them for fourteen years each—and remarked that they were a long time completing their moult, sometimes the whole summer. [This is always the case with Peregrines, and doubtless with other birds of prey.—ED.] They both eat fish, and were rather partial to earth-worms, which they would regularly hunt for on the grass-plot after rain. I shall never forget the instinct displayed by one of these birds on my throwing towards it a dead snake. At once its wings and every feather of its body were raised, its eyes appeared to flash fire, and, standing as high as it could on its legs,—I suppose to avoid being bitten,—it suddenly darted out one foot, and, clutching the reptile just behind the head, held it, so to say, at arm's length, never for one moment relaxing its hold, but, with continued jerks and convulsive grasps, kept it firmly fixed until it was supposed to be dead; when, lowering its wings and laying every feather perfectly smooth, it began quietly to enjoy its meal, not tearing the animal in pieces, but merely picking off the flesh from head to tail, and leaving a tolerably good skeleton, which, I remember, remained in our garden for some months. I was the more struck with the instinct displayed in dealing with a snake because the bird had been brought up almost from the nest, and therefore could not have come in contact with many reptiles in a wild state, though, of course, its parents may have brought some to the nest. On April 16th another Buzzard was similarly trapped.

On April 10th a Puffin was brought in by a Plymouth fisherman, and on the 28th I heard and saw several Whimbrels. A nest of young Ravens, fully fledged, was brought from Dartmoor about the same date.

OCCASIONAL NOTES.

HUNTING THE WILD CAT.—To my remarks under this heading (Zool. 1878, p. 251) the following may be added:—In 1205 (6 John) Gerard Camville had special license to hunt the Hare, Fox, and Wild Cat throughout all the King's forests; and in 1239 (23 Hen. 3), in consideration of a Goshawk given to Simon de Pierpont, Earl Warren obtained leave to hunt the Buck, Doe, Hart, Hind, Hare, Fox, Goat, Cat, or any other wild beasts in certain lands of Simon's. But it was not for diversion alone that the Wild Cat was hunted. Its skin was much used as trimming for dresses, and in this way was even worn by nuns at one time. Thus in Archbishop Corboyle's Canons, anno 1127, it is ordained "that no Abbess or Nun use more costly apparel than such as is made of Lambs' or Cats' skins"; and as no other part of the animal but the skin was of any use here, it grew into a proverb that "You can have nothing of a cat but her skin."—J. E. HARTING.

WILD CAT AND OTHER RARER INDIGENOUS MAMMALS OF SCOTLAND.—I have for some time back been working out the past and present distribution of the above, and have already in manuscript a pretty full account of several, including the Wild Cat, Marten, Polecat, Badger, and Black Rat. I have also notes upon a number of others. I should be glad if readers of 'The Zoologist' will assist me, and let me know of anything bearing upon the subject from time to time.—JOHN A. HARVIE BROWN (Dunipace House, Larbert).

BADGER AND POLECAT NEAR LEEDS.—The Badger is a very rare animal in this neighbourhood; two specimens, however, have been obtained since Christmas. The first one was shot on February 24th, by Mr. Wright, the head keeper to Mr. Lane Fox, of Bramham Park. It was discovered asleep under a tree, and was shot with a view to its being preserved for his museum. It was in good condition, and weighed over three stone. The second one was killed on Mr. Tennant's estate at Leacroft. It is possible that these animals may have been a pair, male and female, for they were found within a couple of miles of each other. I saw a Polecat at Adel last month. This is another scarce animal hereabouts, for being great enemies to the gamekeepers, the latter do all they can to destroy them.—W. RAINE (Leeds).

WHITE BADGER IN HAMPSHIRE.—Mr. W. G. Stewart Menzies, of Culdares, dug out at Kempshott, Hants, in the spring of 1879, a white Badger, which was unfortunately killed by the terriers. It is not absolutely white, but of a very white buff, or cinnamon tint. The stripe on each side of the face, and the under side of the body and the legs, which are normally black, are of the same pale tint. The nose and lips (as stuffed) are flesh-coloured, and the eyes pink. I did not myself see the animal in the flesh, but Mr. Menzies is sure that these points are correct. The head, with the exception of the above-mentioned stripe, is, as usual, white. The claws are of a very pale yellow colour, semitransparent. It is a female, and weighed twenty pounds. Its teeth are much worn down and one or two of the canines chipped; but as it made a violent attack on the spade with which one of the men was digging, as well as a determined defence against the terriers, I should suppose the state of the teeth to be not necessarily a sign of age.—ALFRED HENEAGE COCKS (Great Marlow, Bucks).

THE GREAT BUSTARD IN FRANCE DURING THE WINTER 1879-80.—In 'The Zoologist' for January (pp. 25, 26) and March (p. 110) attention was directed to the unusual number of Bustards which were met with during the past winter in Cornwall, Dorset, Kent, Essex, and Cambridgeshire, as well as in Jersey. A similar visitation seems to have occurred in France, and has been reported in 'Le Naturaliste,' a small quarto journal of eight pages, published fortnightly in Paris by M. Deyrolle, 23, Rue de la Monnaie. In the number for February 15th, the Editor says:—"The severe cold of last winter certainly affected the passage of certain migratory birds. Amongst the observations which we have collected on this subject, we ought first to mention the unusual occurrence of the Great Bustard, *Otis tarda*. A good ornithologist, whom we have had occasion to quote more than once, Dr. de Montessus, of Chalon-sur Saône, writes us as follows:—"On the 10th of January last I received from Autun a magnificent Great Bustard. It was a male, killed at Luzy, on the borders of Nièvre and of Saône-et-Loire. A few days previously another was captured nearer to me, at Verdun-sur-le-Doubs, Chalon-sur-Saône. On receiving news of this capture, I at once took steps to obtain the bird, but was too late: it had already brought together a dozen Vandals, who devoured it piecemeal and enjoyed it; notwithstanding which, it was to be mounted by a petty taxidermist in the neighbourhood for the previously agreed price of ten francs. The Vicomte de Chaignon wrote me word that two similar captures had been made in the neighbourhood during the early part of December, one of which was a male, the sex of the other not mentioned. He did not get possession of either of these birds, which probably shared the fate of the one at Verdun. The Great Bustard, therefore, is not yet

extinct. My specimen was in company with eight of his fellows. At Verdun they saw another besides the one killed. It is during severe winters that this bird visits us. In 1850, in the month of February, during a long frost, two specimens which I possess were killed in our plain, a short distance from the Saône. A female bird was given to me about fifteen or twenty years later. M. Mongeard, of Autun, to whose kindness I am indebted for the specimen of 1880, has noticed in the journal 'L'Acclimatation' for July, 1876, two captures made in 1875 in Le Morvan.' To these observations of M. de Montessus, we may add that we have seen this year two specimens of the Great Bustard in the flesh, one belonging to M. Lécuyer, of Carquebret, Manche, and the other to M. Capron, of l'Île Adam, Seine et Oise. They were certainly killed in the neighbourhood of these two localities, although we have no precise details on the subject. Information less positive, however, enables us to state that the Great Bustard has been killed in the departments of Oise, of Seine et Marne, and of Tarn et Garonne. All these captures were made during the second half of December. We have ascertained also that, about the same time, some were observed in the Paris market. From this we may infer, therefore, that during the past winter the Great Bustard was unusually abundant in several parts of France." In a succeeding number of 'Le Naturaliste' (March 15th), Mr. R. de Larelause, of Mont Louis, Vienna, writes:—"I have read in 'Le Naturaliste' the remarks of Dr. de Montessus concerning the Great Bustard (*Otis tarda*), to which I may add that on the 16th of January I saw at some distance a flock of birds which looked very large, and which I did not at first recognise. I approached them by going through a wood, and shot at them at about seventy yards. I was fortunate enough to bring one down, which I then recognised as a Great Bustard (*Outarde barbue*). It was a male bird, at least four years old, but extremely thin. It weighed, however, 7 kilogrammes 500 grammes, and measured in extent of wings 2 metres 30. It was accompanied by eighteen or nineteen others of its species. On the 5th of December another flock of five was seen by a poacher, who succeeded in killing one. I hastened to send and ask him for it, but it was too late, it was half plucked. On the 29th of January I received word that three enormous birds were on the same spot where I killed my Bustard some days previously. I went there, and found another lot of Great Bustards; but this time I was not so fortunate. I wounded one, but without being able to secure it, as it managed to follow the others at a distance. On the last day of the shooting season one was seen at Poitiers by a sportsman, who shot at it, but did not kill it. I remarked that the direction of their course was from the north-east towards the south-west, that they made short flights of about fifteen to eighteen hundred yards, and after the first flight became much more wary." From this it will be seen that during

the past winter there must have been an extensive migratory movement of Bustards over a considerable area, and it would be interesting to have details of any other examples that may have been seen or shot, and not hitherto recorded, in order to trace if possible the starting-point of the migrating flock or flocks, the route taken, and the probable destination. The cause of such a movement can be only faintly surmised.—J. E. HARTING.

ATTEMPTED DOMESTICATION OF THE GREAT BUSTARD.—It may not be generally known that some years since the Acclimatisation Society of Paris offered prizes for the successful domestication of the Great Bustard, one of the conditions being that the birds should be proved to have laid and hatched eggs in confinement. In the 'Bulletin' of the Society for 1861 (p. 318) is an interesting communication from Mr. Althammer, giving the result of his attempts to domesticate this bird in the Tyrol. Three eggs were laid in August, 1860; the hen bird sat, and incubation lasted twenty-five days, at the end of which time one young one was hatched. A similar attempt was made in Warwickshire, in 1876, by Mr. F. Lythall, of Offchurch, near Leamington, who turned out some Bustards on his farm. On the 10th December in that year he wrote me word:—"The Bustards are tame, and eat out of the hand. They are loose by day, and shut up at night. I think they pair, but they have not laid at present, or if they have, I have not found the eggs. They associate with the fowls and turkeys, and take a fly occasionally." I have had no further report since that date.—J. E. HARTING.

SUPPOSED OCCURRENCE OF THE TAWNY OWL IN IRELAND.—When visiting some friends who reside upon the peninsula of Howth, near Dublin, I was informed that they had constantly heard some Owls hooting at night around the house. My first efforts to hear the birds were unsuccessful, owing apparently to these having been moonlight nights, when these Owls remain silent. A few days since, however, on a dark moonless night, I listened for hours to the well-marked and unmistakable note, "tu-whit, tu-who, oo," which I believe is peculiar to the Tawny Owl. To make quite sure I have devoted two other nights to a careful observation of the bird's cry, which I heard at intervals from ten o'clock throughout the night, and as the sounds proceeded simultaneously from different quarters, there were no doubt several individuals concerned. The darkness of the night, and the apparent wariness of the birds, who were no doubt perfectly aware of my ambuscade, totally prevented my having a chance of obtaining a shot. I cannot but think that I have lit upon a colony of the Tawny Owl. I am aware that there is as yet no well-authenticated instance of its occurrence in Ireland. Further, that it is only recently that these birds have established themselves would appear highly probable from the following information:—

About seventeen years ago the peculiar cry first attracted the notice of a relative of mine living in a house adjoining the grounds above mentioned. The younger members of the family called my uncle's attention to the circumstance, and he, after having heard it, took a peculiar pleasure in what he was wont to consider one of the curiosities of Howth. I am well aware that Sir William Jardine is often quoted as having shot a White Owl in the act of hooting; but the almost universal opinion of ornithologists is against him, nor have I been able to discover the original passage containing his statement. Further I do not think the White Owl could have spontaneously developed a hooting cry, unless, as Mr. Waterton suggests when criticising Sir William Jardine, it had been in the habit of hearing and imitating the hooting Owl. I may add that I am well acquainted with the Long-eared Owl and the White Owl, our only two resident species, and have never heard them utter a note in the least resembling the cry to which I have so carefully listened at Howth. As I have never heard the Tawny Owl in England, however, I should be glad to learn if any of your readers have heard the doubly repeated "tu whit, tu whit," with a prolonged "oo,"—the latter sometimes repeated also,—to proceed from any Owl except the Tawny.—H. CHICHESTER HART (Dublin).

[The late Sir William Jardine is not the only naturalist who has testified to the occasional "hooting" of the Barn Owl. See J. Colquhoun, 'The Moor and the Loch' (ed. 1878, vol. ii., p. 58) and W. Boulton, Zool. 1863, p. 8765. With regard to the alleged occurrence of the Tawny Owl in Ireland, it is observable that Smith, in his 'Ancient and Present State of the Co. and City of Cork,' 1750, 2nd ed. 1774, describes as "well known" the Brown Owl and the Grey Owl (p. 328), which we take to be the sexes of the Tawny Owl, and states "that they feed on Mice, and in the evening destroy Rabbits." He includes the Barn Owl in his list as "the Common Barn Owl, White Owl, or Church Owl."—ED.]

BREEDING OF THE POCHARD AND SCAUP IN IRELAND.—I have often been on the point of sending a few notes on the breeding of these ducks in Ireland, but delayed doing so in the hope of obtaining the eggs. As Mr. Gatcombe, however, has started the subject, I may say a few words thereon. Since I first handled a gun, when about twelve years old, I have been a good deal amongst wildfowl. For many years I lived within about four miles of Lough Neagh. When a boy, I used to shoot everything I saw, and at any time of the year: and one of the birds I obtained, almost every July, was the "flapper Red-head" or young Pochard—I should say from about the 20th onwards, but at that time I kept no diary. These Pochards consisted of young birds numbering from five to eight (I think I have seen ten), an old duck, and very often the old drake somewhere in the neighbourhood, if not with the brood. My mode of attack used to be as follows:—

I would paddle up (in a flat-bottomed boat) as if going past, then circle round and round. If the old drake was there I used to try first to get a shot at him, for after the first shot he was not approachable if he was wild. I used to edge in towards the brood, for if I followed him too far I found, when he had flown off, that the others had disappeared in some mysterious way. Having failed to get a shot at him, I would turn my attention to the duck and young. I seldom shot the old duck; I suppose I was tempted by the "brown" of the flock. The old duck, on finding me approaching, would swim off, followed by the clutch. As I pressed them they would go faster and faster, until they would be almost standing or running on the water; if I did not take a shot then, the result of being hurried in this way was that the old bird would flap or fly off quite low in a circle or semicircle round the boat; at the same moment the young would make a rush, some dive, others flap away. I have known one to go to the shore in this way seven or eight hundred yards, in which case I would not get another chance at the flock for the rest of that day, and the odds were that I would not bag two at the most after this, as each bird would take a different direction, and the only one to be seen was the old duck, about a hundred and fifty yards off, in a very restless and excited state. I always found these birds on Lough Beg, a lough one mile north of Lough Neagh. These broods of Pochards used to be far more numerous than they are now. The last time I was there, in August, 1878, I shot, on the 8th and 12th, some young Pochards which could fly about two hundred yards. There was only one brood that I could find that year. I am sorry that I cannot give other dates, but know that it was in July—after the 20th, and before August 20th—that I used to have this shooting. I have shot the Scaup at the end of August, but they were always able to fly at this time of the year, and in flocks of from six to eight or ten usually. I have seen the Tufted Duck remain paired, but have never shot the young before September, so far as I can recollect, though I have seen the old drakes about by themselves in the summer. On one occasion I caught an old dark Tufted Duck that got carried over a fall in the Bann, between Lough Neagh and Lough Beg; it was moulting and could not fly, but seemed well enough, judging from the chase it gave before I got it into my landing-net. They may breed, but I am sure that the Pochard does, and hope some day to procure eggs. I believe the Scaup breeds in Lough Neagh, but not on Lough Beg. I will keep the skins of the next young Pochards I obtain, so as to prove my statement. Though I am quite satisfied myself, I know other ornithologists would like more substantial proof. I heard of the case referred to by Mr. Gatcombe, and said at the time that I thought it was nothing strange, particularly at that date.—H. L. Cox (Army Medical Department).

GREEN WOODPECKER IN SOMERSET.—In the April number (pp. 140, 141) the Editor suggests that the fact of so large a number of Green

Woodpeckers being killed in Somersetshire may indicate a migratory movement towards the south-west. In the May number Mr. Cecil Smith "cannot agree with the editorial remark" above quoted, but accounts for their destruction by the additional number of shooters caused by the late hard winter. Both causes, it seems to me, may have brought this about. Anyone who has closely watched the effects of the late severe winter of 1878-79, and carefully recorded the numerical decrease of certain species in Scotland, cannot fail, in my opinion, to be convinced of the fact that unusual migration took place, and that there was during the following summer a crowding down upon more southern latitudes of many species, and a dearth perfectly saddening to see in more northern ones. No doubt winter killed a great number, but the late spring and short summer delayed the spring migration of 1879, until the birds found themselves obliged to breed further south. This year (1880), I am glad to say, our copses and coverts, gardens and shrubberies, appear to be as full of bird-life as formerly.—J. A. HARVIE BROWN (Dunipace House, Stirlingshire).

CORRECTION OF ERROR.—In the fifth line of the foot-note on the first page of "Report on the Migration of Birds in the Autumn of 1879" (Zool. May, 1880), for "winter of 1879-80" read "winter of 1878-79." In 'Nature,' May 13th, it is said, "The Manxmen were silent." From Point of Ayr we received a very able and full report. The Isle of Man stations are included under "Commission of N. Lighthouse," Section W. of Scotland.—J. A. H. B.

RED-LEGGED PARTRIDGE IN GUERNSEY.—In Mr. Cecil Smith's recently published book on the 'Birds of Guernsey,' no mention is made of the Red-legged Partridge, from which it is to be inferred that this bird is unknown there. It is worthy of note that in Willughby's day (two centuries ago) it was believed to exist both in Guernsey and Jersey, for at p. 23 of that author's 'Ornithology' we find this remark:—"We have been informed that the Red-leg'd Partridge, *Perdix ruffa*, is found in the Isles of Jersey and Guernsey"; and further on (p. 167), "This kind is a stranger to England: howbeit they say it is found in the Isles of Jersey and Guernsey, which are subject to our King."—J. E. HARTING.

CUCKOOS DENUDED OF FEATHERS.—In 'The Zoologist,' April, 1866, appears a reference to the tradition of Cuckoos being sometimes found denuded of feathers. I have not met with any later notice of this; but having recently discovered a similar tradition to obtain in the Isle of Man, and hearing of one instance that occurred here about thirty years ago, when a Cuckoo was found in this state by a farmer in the midst of his peat stack, was induced to make inquiries, and sent a short notice to 'Science Gossip,' January, 1880. In the April number of that magazine is given another instance, which occurred in Somersetshire about ten years ago. As

the first notice I have seen appeared in your magazine, I thought it might be of sufficient importance to warrant me in again calling the attention of your readers to the strange fact, if fact it be, of this bird so casting its feathers in the winter. Has the like been observed of any other bird? How is it accounted for? Is it only when hybernating with us that it happens? Perhaps some of your readers may shed light on the subject, by informing us of instances of which they may have heard, or, better still, which may have come under their own observation. Hitherto the accounts, unfortunately, appear to have been all at second-hand.—PHILIP M. C. KERMODE, Ramsey, Isle of Man.

[Nothing of the kind has ever fallen under our observation, nor have we ever investigated such a case, none having been reported to us. Under these circumstances we can scarcely venture to offer any opinion. We may remind our readers, however, that young Cuckoos are sometimes hatched very late in the summer,—later than many other birds,—and scrambling away from the nest of their foster-parents (which continue to feed them until they can fly), might well be found in some wood stack, or other place of shelter, in a half-fledged state. We remember some years ago, while on a visit to Sir John Crewe, at Calke Abbey, to have seen a young Cuckoo in this condition at no great distance from the house.—ED.]

WOODCOCK CARRYING ITS YOUNG.—On the 13th of this month two ladies, inmates of this house, put up a Woodcock in a wood here, which rose within a yard of their feet, carrying a young bird between its legs pressed close to its body. It was so near that the feet of the little one hanging down were plainly seen. The ladies, on being shown immediately afterwards the plate in 'The Zoologist' for November, 1879, observed that it differed from the view presented to them, in showing the old bird as grasping the young one in its claws, and in the non-appearance of the feet of the young bird. I may observe that Woodcocks have for many years bred here yearly, and in increasing numbers.—CLERMONT (Ravensdale Park, Newry).

COMMON SCOTER IN CAMBRIDGESHIRE:—On April 19th we were Rook-hawking in Cambridgeshire, near Whittlesford, and had some good flights, although the wind was rather too high. Just as we were leaving off, the farmer over whose land we had been riding came up to tell us that a curious bird had been captured the previous day on his farm, that he still had it alive, and that nobody could say what it was, except that it was some kind of duck. At my request it was sent for, and shortly arrived in a wicker coop, when I found it to be a female of the Common Scoter. It had been picked up in an exhausted state in one of the ditches on the farm, apparently driven inland (at least forty miles from the sea) by the gale

which had been blowing for two days previously. I brought it back with me to London, and presented it to the Zoological Society, in whose Gardens it may now be seen in good health and plumage. A few days since, while watching it diving in pursuit of fish, which it caught easily, I remarked that it did not use the wings under water like a Guillemot, but kept them pressed close to the sides, propelling itself by means of the feet alone.—
J. E. HARTING.

SISKIN NESTING IN BEDFORDSHIRE.—It may interest some of your readers to know that two nests of the Siskin were found on my premises last May (1879), and that several young ones were reared. This is the first instance, so far as I am aware, of this pretty little finch nesting in our midland county.—HENRY BURNEY (Wavendon Rectory, near Woburn).

[Further particulars of the situation selected, materials of nest, number of eggs, and so forth, would have been interesting. Perhaps our correspondent will supply them.—ED.]

RARE BIRDS IN OXFORDSHIRE.—I am sorry to have to record the following interesting and (in this district) rare birds as having been lately shot in this county:—Common Tern, on the canal near Sumerton, on April 26th; Ring Ouzel, at Epwell, same day; Whimbrel, at Bloxham, on April 29th; two male Golden Orioles, in a wood near Great Tew, about the beginning of May; and an immature specimen of the Black-headed Gull, picked up dead about the same time. About the middle of March last a Peregrine Falcon struck at a decoy Wood Pigeon in a field near Marston St. Lawrence, Northants, and was shot. I had the pleasure of examining it, and found it to be a female in good condition. I am afraid the Wild Birds Preservation Acts have very little effect just here. On April 23rd I saw a large Gull fly over, but was unable to determine the species. Fieldfares are staying late this year; I saw about a dozen on May 9th.—
OLIVER V. APLIN (Bodicote, near Banbury).

UNUSUAL NUMBER OF EGGS IN A THRUSH'S NEST.—On May 2nd I found, near Ipswich, a Thrush's nest with the unusually large number of eight eggs. At first I was of opinion that some one had added eggs from another nest; but I learned on enquiry that such was not the case, the only persons having access to the plantation not being aware of the existence of the nest. On a subsequent visit the bird was sitting on the eggs. I believe this fact to be worth recording, as probably the only instance on record of a Thrush laying as many as eight eggs.—H. MILLER, JUN. (Ipswich).

HOBBY NESTING IN ESSEX.—I have ascertained beyond doubt that a pair of Hobbies bred last year near Belhus Park, in Essex, having seen

a splendid male, which our former keeper shot from the nest, he having also shot at the female.—CLIFTON (Cobham Hall, Kent).

THE SALMON DISEASE.—At a meeting of the Dumfriesshire Natural History Society, held on the 30th April last, the Secretary read a paper on the origin of the Salmon disease. Upon examination and careful dissection of specimens under the microscope, he found that when Salmon are first affected they have one or two small white spots generally near or on one of the fins, often the dorsal or caudal fin. These spots gradually extend, until in many cases the fish is nearly covered. When the disease begins to affect the constitution of the fish, they look languid, and gradually draw into the smooth and shallow water. When seen in the river the white spots look like mould, such as is generally seen on decaying animal or vegetable matter. When the fish is taken out of the water that mouldiness assumes a matted, slimy appearance, and can easily be scraped from the scales with a sharp knife, in most cases leaving no trace. The mouldy-looking substance placed under the microscope reveals that it is a fungus—viz, *Saprolegnia ferax*, the filaments of which take all sorts of forms. The spores of the fungus have a motion of their own inside the parent cell, and when the proper time comes they are discharged by the sporangia at the apex of the filaments, and then take the form of zoospores, having two “cilia” moving about in the water like true *animalcula*, ready to attach themselves to any proper substance that may come in their way on which to germinate, and throw out filaments similar to those from which they came. Considering the thousands of filaments on one single spot of the disease, and the number of spores given off by each, the quantity of zoospores lodged in and floated down an affected river must be beyond calculation. One feature noticed in connection with these zoospores was, that if a stream of liquid was made to flow across the field they could attach themselves to the glass, so that they were not carried away by the stream, and by the same means, therefore, they could attach themselves to stones, &c., in the river, or to the dorsal fin of a Salmon. The roots of the fungus were not traced beyond the skin that covers the scales. On making a cut into the fish through the fungus, there is seen an inflamed, unhealthy-looking stratum of muscle below the skin, of varying thickness. In one fish examined it extended right through to the inside. Sections of this muscle when placed under the microscope were found to be literally one mass of life—that life being a species of *bacteria*, or small discoid-looking bodies, embedded in and moving amongst the striated muscle fibre of the fish; and when, by pressure or otherwise, they are forced into the surrounding fluid they have a power of motion in a circular direction. In some fish examined the muscle was almost detached from the strong fibro-muscle layer of the skin, and the muscle fibres of that layer were not

adhering together as in their natural state, and could be separated from each other like threads by the needle. Whether that diseased condition of that part of the skin was caused by the state of the muscle immediately below it, or by the fungus on its surface, the author of the paper was unable to say. Should the fish live long enough, ulceration of the affected parts must take place. The disease was located in the muscle of the fish, and perhaps commences in the blood, caused either by the food they eat or by some deleterious solution in the water which passes through the gills, and the unhealthy, decaying fluid or matter, which naturally passes off from these *bacteria* and exudes through the pores of the skin, forms a *nidus* for the germination of the zoospores of the fungus. Owners of aquaria state that, previous to the growth of the fungus on a fish, it exhibits signs of indisposition. Dr. Carpenter, writing of Fungi, says, "There are various diseased conditions of the human skin and mucous membranes in which there is a combination of fungoid vegetation and morbid growth of the animal tissues, such as *Tinea favosa*;" and that "it is a disputed point whether the morbid condition or the fungus is the disease." The first is rather consistent with general analogy, and especially with what is known of the conditions under which the various kinds of fungoid "blights" develop themselves in or upon growing plants. Unless there is a predisposing cause, fish will not contract the fungoid part of the disease; they must have a disease or decay in their body on the products of which the fungus germinates and grows. He believed that salt is not very favourable to the growth of *S. ferax*; but, as far as the *bacteria* in the muscle is concerned, no washing by any solution will affect it. He had cut sections of muscle containing them, and placed one in a saturated solution of salt and one in clean water, and kept them for several days. Those in the salt solution were as lively at the end of the period as when taken from the fish; in fact, they did not die until they were placed in a preservative fluid containing arsenic. If this disease is cured by the return of the fish to the sea, it must be ascribed to the food they get there and the general invigorating influences, and not to the fact of their being washed externally by sea or salt water. He had no faith in putting salt, acetic acid, or any other chemical in the water, believing that by the time the diseased fish were expected to be cured, they and all other fish in the river would be killed. He was of opinion that the cause must be looked for in the water, by examining, chemically, microscopically, and experimentally, quantities of water taken from the river in the autumn when it is very small, after a long absence of rain. Mr. Robert Service said it seemed to be a rule, almost without exception, that before a race of animals or plants is attacked by any epidemic of fungoid or other origin, they must have become predisposed to such attack by a weakened constitution or actual disease. Mr. Rutherford's discovery of *bacteria* in countless myriads in the flesh of Salmon attacked

by the fungus at once takes us a step nearer the origin of the mysterious disease. The presence of *bacteria* at once accounts for the luxuriant growth of the *Saprolegnia*, which has had such a fatal effect on the Salmon. The spores of this fungus are always present, ready to germinate into active life when a proper *nidus*—such as the skin of a sickly or wounded fish—comes into contact with them. It remains to be ascertained what impairs the constitution of Salmon and other fish so as to permit of *animalculæ* living in their flesh. He thought it, in some measure, due to the absence of Otters. The Otter is the natural enemy of the Salmon in fresh water; but they have been hunted, trapped, and shot till not one remains where formerly there were dozens. The Otter, like the Peregrine, he thought, takes the prey most easily captured, thus removing the weakly, the sick, and all those which, from whatever cause, would cause a degeneration of the breed. If there had been Otters in the district in the numbers in which they once were, he thought those wretched-looking Salmon to be seen along the sides of the Nith would all have been dragged out and eaten by them. He felt confident that if the Otters, just for a change, were protected for a year or two, the disease would be checked.

THE EAGLE RAY OFF PLYMOUTH.—A very perfect, but rather small, specimen of that rare fish, the Eagle Ray, *Myliobatis aquila*, caught off Plymouth, was purchased on May 1st by Mr. Brooking Rowe, and is now in process of preservation. Its measurements, as nearly as could be ascertained, were as follows:—The whole length of body, not including the long cord-like tail, about 9 inches; breadth across the pectoral fins, 18 inches; length of tail, 20 inches, furnished with a dart or spine having reversed serrated teeth at the sides, and placed within a few inches of its base. The back is raised and sloping towards the snout, and also towards the tail, which is very long and slender, ending in a point, about twice the length of the body. Colour above of a dark purplish brown, shading to dark slate on the back; under parts nearly pure white. Head, eyes and mouth very toad-like in appearance; hence it is sometimes called "Toad-fish."—JOHN GATCOMBE (55, Durnford Street, Stonehouse, Plymouth).

UNUSUAL ASSEMBLAGE OF THE MASKED CRAB.—On May 1st my trammel, of forty fathoms in length, was shot east and west on a rocky bottom in about three fathoms water at two hundred fathoms south of our pier-head, and throughout it—not in any particular place, but scattered—I took twenty-eight male and seventeen female (altogether forty-five) specimens of the Masked Crab, *Corystes cassivelaunus*. This crab is not an uncommon one, but I have never before taken it except in single specimens, and never, that I can recollect, on a rocky bottom. It is essentially a sand crab.—THOMAS CORNISH (Penzance).

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

LINNEAN SOCIETY OF LONDON.

May 6, 1880.—H. T. STAINTON, F.R.S., in the chair.

Three Foreign Members were elected, *viz.*, two distinguished botanists, M. C. J. de Maximowicz, Director of the Imperial Botanic Gardens, St. Petersburg, and Prof. E. Strasburger, of the University of Jena; and one zoologist, Prof. Elias Metschnikoff, the indefatigable Director of the Zoological Institute of Odessa, and whose researches, both embryological and anatomical, among the marine invertebrata hold a high place.

Prof. P. Martin Duncan orally communicated the substance of a paper "On an unusual form of the Genus *Hemipholis*, Agass." This was dredged by Dr. Wallich off the Algulhas Bank, S.W. of the Cape of Good Hope. Its zoological position may be doubtful, for the classification of the *Ophiurioidea* is at present full of anomalies; but the specimen nevertheless possesses unusual interest, from the peculiar nature of the so-called dental or chewing apparatus. These oral structures and other specialities of conformation were elucidated in detail by the author.

Prof. E. Ray Lankester read a paper "On the Tusks of the Fossil Walrus found in the Red Clay of Suffolk." He now withdraws the generic name of *Trichecodon* instituted by him in 1865, and refers a series of later discovered large tusks in the Ipswich Museum, including the former specimens, to belong to the living genus *Trichechus*, but he specifically distinguishes this as *T. Huxleyi*. Prof. Lankester, moreover, is inclined to think there is very insufficient grounds for the generic subdivisions *Alachtherium* and *Trichecodon*, as used by Prof. Van Beneden, nor is there evidence, according to the former, for the association of the Suffolk and Antwerp tusks.

A short communication, "On an irregular Species of *Amblypneustes*," by Mr. Charles Stewart, was taken as read.

A letter was read by Mr. Thomas Christy on Mr. Blacklaw's unsuccessful endeavour to raise the Liberian coffee at St. Paulo, Brazil; and a paper on Brazilian Algae, by Prof. Dickie, and another, by Mr. T. Bettany, against the use of tri- and poly-syllabic terms in botanical nomenclature, were read and discussed.—J. MURIE.

ZOOLOGICAL SOCIETY OF LONDON.

May 4, 1880.—Prof. FLOWER, LL.D., F.R.S., President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of April, and called special attention

to an example of the Short-nosed Perameles, *Perameles obesula*, purchased April 15th, being the first example of this marsupial which had been received; to a young male Cape Hunting Dog, *Lycaon pictus*, presented by Mr. C. Ernest Pope, of Alice, Victoria East, South Africa, received April 19th; and to a Koala, or Native Bear of Australia, *Phascolarctus cinereus*, purchased April 28th, being the first example of this peculiar marsupial that had been brought alive to Europe.

Mr. Sclater exhibited a specimen of the Ibis, *Geronticus comatus*, lately obtained at Biledjik, on the Euphrates, by Mr. Danford, and made some remarks on its previously known distribution.

Dr. A. Günther read a note correcting the statement made by him at the meeting of the Society on the 20th January last, respecting the occurrence of *Holocanthus tricolor* on the British coast. Further particulars received by Dr. Günther had led him to decide that this fish could not be considered as having been caught on the British coast.

Mr. W. A. Forbes read a note on the cause of death of a Leopard in the Society's Menagerie.

Mr. Dobson exhibited and made remarks on some bones of the Dodo, which had been transmitted from Mauritius in 1847-50, by Dr. F. Reid to Sir James Macgregor, and having been deposited at Fort Pitt, Chatham, were afterwards removed to Netley Museum.

Mr. F. Jeffrey Bell exhibited the immature specimen of *Echinolampas* referred to by him in his communication on *Palæolampas*, pointing out its more differentiated characters, and suggested the possibility of its being an example of *E. oviformis*.

Prof. Flower called the attention of the meeting to the fact that a young specimen of the Lesser Fin Whale, *Balaenoptera rostrata*, 15 feet long, which had been taken off the coast of Cornwall, was now being exhibited in London.

A communication was read from Prof. J. O. Westwood, containing an account of the species of Sawflies composing the Australian genus *Perga* of Leach.

A communication was read from Dr. W. J. Hoffman on a supposed instance of hybridization between a Cat and a Lynx.

Mr. W. A. Forbes read the second and third parts of his series of papers on the anatomy of the Passerine Birds. These communications related to the syrinx and other points in the anatomy of the *Eurylamidæ*, and to the structure of *Philepitta* and its position amongst the Passeres.

A communication was read from Mr. F. Day, in which he gave the description of a new Entomostrakon from Afghanistan.

Mr. Oldfield Thomas read a paper on a collection of Mammals brought from Ecuador by Mr. Clarence Buckley. Amongst these was a new species of *Bassaricyon*, proposed to be called *B. Alleni*.

Mr. A. G. Butler read a paper containing descriptions of a collection of Lepidoptera made by Major Howland Roberts at Rokeran, near Kandahar, on the River Urgundab.

Mr. G. French Angas read a paper containing further additions to the marine Molluscan Fauna of South Australia, with descriptions of six new species. A second paper by Mr. Angas contained the descriptions of three species of marine shells from Port Darwin, Torres Straits, discovered by Mr. W. J. Bednall, and a new *Helix* from Kangaroo Island, South Australia.
—P. L. SCLATER, *Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON.

April 7, 1878.—H. T. STAINTON, F.R.S., Vice-President, in the chair.

The following gentlemen were ballotted for and elected Ordinary Members:—George Carter Bignell, 7, Clarence Place, Stonehouse, Plymouth; W. D. Cansdale, 4, Guithavon Terrace, Witham, Essex; Frank Crisp, LL.B., B.A., Sec.R.M.S., 5, Lansdowne Road, Notting Hill, W.; and the Rev. W. Fowler, M.A., F.L.S., Repton, Burton-on-Trent. M. Ed. André, 21, Boulevard Brétonnière, Beaune (Côte d'Or), France, was ballotted for and elected a Foreign Member.

Mr. John T. Carrington exhibited a pale variety of *Arctia caja*, bred by a gentleman at Croydon, who had been experimenting upon the effects of the rays of light transmitted through glasses of various colours upon the species. The variety exhibited had been reared under green glass, but there was no evidence to show that the variation was due to the green rays.

The Secretary read the following communication from Mr. G. A. J. Rothney, of Calcutta, "On Insects destroyed by Flowers":—

"I notice in the report of your proceedings for April 2nd, 1879, a letter from Mr. J. W. Slater, from which I copy the following extract:—'Whilst it is generally admitted that the gay coloration of flowers is mainly subservient to the purpose of attracting bees and other winged insects, whose visits play so important a part in the process of fertilization, it seems to me that one important fact has scarcely received due attention. Certain gaily-coloured, or at least conspicuous, flowers are avoided by bees, or, if visited, have an injurious and even fatal effect upon the insects. Among these are the dahlia, the passion-flower, the crown-imperial, and especially the oleander. That the flowers of the dahlia have a narcotic action both upon humble-bees and hive-bees was first pointed out by the Rev. L. Jenyns, in his "Observations on Natural History" (p. 262). He mentions that bees which visit these flowers are "soon seized with a sort of torpor, and often die unless speedily removed," &c.'

"As regards the dahlia, this is so directly opposed to my recent

experience in this country that I should like to record the following observations.

"I was staying at the hill-station of Mussoorie in September and October of last year,—a time when the wild dahlias* were at their greatest perfection, and formed a striking feature in the scenery,—there were numbers of other wild flowers of various species in profusion, but the dahlias formed the particular attraction of the Aculeate Hymenoptera, and my richest collecting ground was always where the dahlias grew thickest, my most favoured spot and warmest corner being at a place called Wolfsburn Road, Laudun, where I could stand up to my waist in a rich bank of dahlias of all colours, and collect around me in the shortest possible time the greatest number of specimens and variety of species to be obtained anywhere in or near Massoorie. I am not certain of many of the species captured, but the following genera were strongly represented, especially the first three:—*Bombus*, *Apis*, *Vespa*, *Andrena*, *Halictus*, *Prosopis*, *Polistes*, *Odynerus*, and others; besides which, had I been collecting them, I might have taken many species of butterflies, day-flying moths, ichneumons, as well as several species of Diptera and Coleoptera. The dahlias were mostly single, but a few double ones were also to be found. The bright yellow single flowers appeared to be the most attractive—that is, in taking up my position on the steep bank I preferred to plant myself in a mass of yellow flowers to any other colour. I never observed that any bee, wasp, or other insect was injured in any way by visiting these flowers. I never found a dead one in or under the dahlias, and certainly, from the activity required to capture them, I never came across any bee or wasp suffering from 'narcotic action' or 'seized with a sort of torpor.' Under one fine bush of the yellow single flower I found the nests of a large species of humble-bee, and spent many hours in watching the workers fly in and out and to and from, the dahlia flowers, covered with the yellow pollen, and they never seemed any the worse for their excesses; indeed they were uncommonly lively, and on one occasion, when I had been capturing too many of their fine females, the workers fairly drove me off the ground by their most persistent attacks."

The Secretary then read a paper by Mr. Peter Cameron entitled "Notes on the Coloration and Development of Insects." Professor Westwood communicated two papers:—"On two Gynandromorphous specimens of *Cirrochroa Aoris*, Dbl., an Indian Species of Nymphalideous Butterflies," and "On *Cetonia Aurata* and *Protactia Bensoni*." Specimens and drawings were exhibited in illustration of the last paper, showing the specific distinctness of the insects in question.

* Mr Rothney must be mistaken in speaking of the "wild dahlia" in India, as this plant is Mexican, and not Indian, as pointed out by several Members on hearing the above communication.—Ed.

May 5, 1880.—H. T. STAINTON, F.R.S., Vice-President, in the chair.

Mr. Peter Inchbald, of The Lodge, Hovingham, York, a former Member, was ballotted for and re-elected into the Society.

Mr. W. C. Boyd exhibited a very pale specimen of *Nyssia hispidaria*, taken at light at Cheshunt Station.

Mr. M. J. Walhouse exhibited some Geodephagous beetles which were found only on the summits of some of the highest mountains in India.

Mr. W. L. Distant exhibited a long series of specimens of the Madagascar Homopteron *Ptyelus Goudoti*, Benn., to illustrate the extreme variability of the species. The series showed a gradation from melanic forms having the tegmina and pronotum black, to an albinic variety in which the tegmina and pronotum were pale luteous. One specimen was asymmetrical in the markings of the tegmina, thus possessing the characters of two varietal forms, as shown in the accompanying woodcut.



Mr. Distant observed that he had found this not at all an exceptional occurrence in extremely variable species of the order *Rhynchotha*. Like other species of this and allied genera, *P. Goudoti* in the larval condition emits a frothy secretion, which M. Goudot described as being done so plentifully at the time of the greatest atmospheric temperature, as to assume the appearance of actual rain. From an experiment made with sixty or seventy larvæ, M. Goudot concluded that a vessel holding nearly an English quart could have been filled with this secretion in an hour and a half.

Mr. Stainton pointed out that this series offered a good illustration of the danger of founding a species on a single specimen.

Mr. T. R. Billups exhibited two living specimens of *Carabus auratus*, found in the Borough Market, and probably introduced with Belgian potatoes.

Mr. F. P. Pascoe stated that he had recently heard a rumour to the effect that the Sphinx-moth with a proboscis of sufficient length to reach into the nectar of *Anagracum sesquipedale*, predicted by Mr. Darwin and Mr. Wallace to occur in Madagascar (see also Proc. Ent. Soc. 1878, p. iii.), had actually been captured in that island, and he asked whether any Members of the Society were able to confirm this statement.

Mr. M'Lachlan remarked that as a believer in the doctrine of Evolution, he thought that much harm was done to it by its friends, of which this was, in his opinion, an example.

The Chairman asked whether any Members had observed the date of appearance of insects this season.

The Secretary stated that a copy of a work, edited by Miss Ormerod, had just been presented to the Library by its Editor, in which an immense number of meteorological observations had been tabulated, in such a manner as to lead to the hope that some light might be thrown by this and future work conducted on a similar plan on the connection between meteorological phenomena and the appearance of insects, &c.

Miss E. A. Ormerod remarked that the records from which the 'Cobham Journals' had been reduced were taken by Miss Caroline Molesworth at Cobham, Surrey, and extended, with more or less completeness, over a period of about forty-four years. The coincident observations of weather and the state of animal and plant life in a continuous form extended over only about twenty-six years,—from 1825 to 1850 inclusive,—and the present volume contained the reduction of these observations as far as they bear on these points of coincidence. One object in view had been to give by abstracts and summaries such a statement of the successive states of temperature, amount of rainfall, and direction of the wind, as would enable the reader to see, by a glance at the parallel columns of each month's entries, what periods of marked variation or non-variation occurred in what is commonly known as "the weather." The tables given in the work had been directly reduced from Miss Molesworth's careful records preserved in the library of the Meteorological Society, and Miss Ormerod, the Editor of the 'Journals,' had added an introduction giving the necessary working details, together with a chapter of "Results of Observations," working out the coincidences that appeared between meteorological and phenological conditions—*i. e.*, between states of weather and subsequent dates of plant-life, the appearance of spring birds, &c. Miss Ormerod added that, from an entomological point of view, it was much to be regretted that Miss Molesworth, who was remarkable for the extreme accuracy of her observations, did not give more records regarding insects. There were, however, a few, and one of special economic interest, in which the larvæ of the "Turnip Sawfly" are noticed as causing damage in August: at the beginning of September there occurs an entry of "myriads of *Haltica nemorum*," and after a fall of rain which cleared them away, the "Turnip Sawfly" appeared in the imago state on the same ground, showing that the rainfall had no beneficial effect in preventing their development. Miss Ormerod stated, in conclusion, that from one series of records spreading over such varied and important branches of observation, no certain conclusions could be at present drawn, but the work in question might offer valuable suggestions

for future observers. The results of similar records carried out hereafter may throw much light on the meteorological principles of cultivation, and Miss Molesworth, who was one of the first to lead the way in the path of joint observation, deserves our grateful remembrance.—R. MELDOLA, *Hon. Secretary.*

NATURAL HISTORY SOCIETY OF GLASGOW.

The eighth and concluding meeting of the session was held on Tuesday, April 27th, in the Library of Anderson's College, Prof. JOHN YOUNG, M.D., F.G.S., in the chair.

The proceedings opened with an address by the President "On Critical Periods in Geology," in which he reviewed the several epochs, and illustrated his remarks by a large geological map of the world.

Mr. Thomas King exhibited a growing specimen of the common primrose, *Primula vulgaris*, in which the points of the calyx had been metamorphosed into true leaves.

Mr. Peter Ewing showed specimens of *Petasites alba* from the neighbourhood of Barrhead. This plant, which differs not only in the colour of its flower but in other respects from the common butterbur, is not indigenous, but may be considered as an escape from shrubberies, although found in many different localities.

Mr. John M. Campbell exhibited a specimen of the Collared Peccary, *Dicotyles cajacu*, Linn., and made some remarks on the distribution and habits of the genus.

Mr. Peter Cameron exhibited specimens of *Microgaster sericeus*, a parasite on *Thera juniperata*, from Milngavie. When it leaves the caterpillar on which it has fed it spins a cocoon attached to the spine, where it in its turn is attacked by other ichneumons, of which he had bred two species of *Hemitetes*. He also exhibited two species bred from the galls of *Lasioptera juniperina*, viz., *Torymus juniperi* (Linn.), a species new to Britain, and an undescribed species of *Lygocerus*, which it was proposed to name *juniperi*. He also showed a gall from Cadder of *Aphilothric elementina*, a species new to Britain.

Mr. J. J. Dalgleish contributed a paper "On the Irruption of Skuas, principally *Stercorarius pomatorhinus*, on the Scottish Coasts, in the Autumn of 1879."

Mr. John A. Harvie Brown read a monographic sketch of "Barra Head, and its Bird-Life," being principally based upon the personal observations of Mr. George M'Lachlan, formerly lighthouse keeper at Barra Head, and upon the minor results of a short visit made to that locality by Capt. H. W. Feilden and himself in 1870. After taking notice of the accounts of

previous writers, as Martin, M'Gillivray, &c., Mr. Brown proceeded to give a general description of the cliffs of the island, and thereafter treated of the several species of rock-birds inhabiting it.

A paper by Mr. Robert Etheridge, jun., was read, "On the Occurrence of the Genus *Pentremites* in the Carboniferous Series of the East of Scotland." The author stated that in the 'Geological Magazine' for March, 1878, he called attention to the probable occurrence of the genus *Pentremites* in Scottish carboniferous rocks. A few crushed specimens of a small Pentremite had been since found at Kidlaw, in Haddingtonshire. Unfortunately, as is often the case in specimens of unusual interest, these examples were either so fragmentary or greatly crushed that the author was afraid that little beyond satisfactorily proving the identity of the genus could be made of them. However, further examination gave a more hopeful view of the case, and he was enabled to give a description of the fossils.

A second paper was read by the same author entitled "Notes on Carboniferous Brachiopods." The several points treated of may be enumerated—(1), On the colour markings in *Lingula mytiloides*, Sorv.; (2), On the occurrence of *Syringo thyris-cuspidata* in Scottish carboniferous strata; (3), Notes on *Spiriferina Etheridgei*, Davidson; (4), Notes on *Chonetes polita*, M'Coy; (5), On the punctate structure of *Orthotites crenistria*, Phillips; (6), On a small, distorted, and probably young form of *Chonetes* from the carboniferous beds of the East of Scotland; (7), On a small specimen of *Orthis*, perforated by a crinoid stem. The remarks on the various species treated of were illustrated by drawings and full descriptions of the figures given.

NOTICES OF NEW BOOKS.

Recherches sur la Mue du Bec des Oiseaux de la famille des Mormonidés. Par le Docteur LOUIS BUREAU. (Extrait du 'Bulletin de la Société Zoologique de France,' 1879.) Royal 8vo., pp. 63; planches et carte. Paris: Savy, 77, Boulevard St. Germain.

IN 'The Zoologist' for July, 1878 (pp. 233—240), we gave a translation of the more important portions of a remarkable paper by Dr. Bureau "On the Moults of Bill and Palpebral Appendages in the Common Puffin," then recently published in the 'Bulletin de la Société Zoologique de France.'

Since that date Dr. Bureau has been actively engaged in studying other species of the Puffin family, with a view to

ascertain whether they, or any of them, undergo a similar seasonal change of bill. The result of his enquiries has lately been published in the 'Bulletin' of the above-mentioned Society, and has been issued in separate form, with six coloured plates and a map showing the distribution of the different forms of *Fratercula arctica*, of which Dr. Bureau recognises three. His remarks are too long to admit of translation in these pages, hence we must content ourselves with giving a brief summary of the results arrived at.

For the Puffin and its allies Dr. Bureau establishes a family, *Mormonidæ*, distinct from *Alcidæ*, and, as above stated, recognises three forms of the Common Puffin, which he designates *armoricana*, *islandica*, and *glacialis*. His map shows the geographical distribution of these three forms, so far as at present ascertained. *Armoricana* is the form which predominates in the British Islands, the Færoe Isles, the western coast of Gothland, and the northern shores of France. *Islandica* occurs along the coast between the North Cape and the Varanger Fjord, Iceland, South Greenland, Newfoundland, and the southern coast of Labrador; while *glacialis* is found throughout Spitzbergen, the cliffs of Prudhoe Land abutting on Smith's Sound, and the northern coast of Labrador.

With some slight variations, which are described, Dr. Bureau finds that the following species shed portions of the bill in the same way as the Common Puffin does, namely, *Fratercula corniculata*, *Lunda cirrhata*, *Ceratorhina monocerata*, *Ombria* (vel *Phaleris*) *psittacula*, and *Simorhynchus cristatellus*. One species at present remains undetermined as to the moult, namely, *Simorhynchus camtschaticus*, while *Simorhynchus microceros*, which Dr. Bureau identifies with *S. pusillus* of Pallas, has been found to moult the tubercle only.

We may here remark that, since the publication of Dr. Bureau's first memoir on the subject, Mr. Robert Ridgway, of Washington, has been engaged in independent research on this very question, and in the current number of the 'Bulletin of the Nuttall Ornithological Club' (p. 126) he has briefly stated the result of his investigations. His conclusion is that "a similar change from the breeding to the winter condition exists in the North Pacific species of *Fratercula* (*F. corniculata*), in *Lunda cirrhata*, *Ceratorhina monocerata*, the species of *Simorhynchus*

(*cristatellus* and *pygmæus*), and in *Ciceronia microceros*, but probably not in any other of the North Pacific forms, except perhaps *Phaleris psittacula* and *Ptychorhamphus aleuticus*."

As regards the synonymy of the species dealt with, Dr. Bureau's determinations coincide with the views of Dr. Elliott Cones, as expressed in 1872 in his 'Key to North American Birds.'

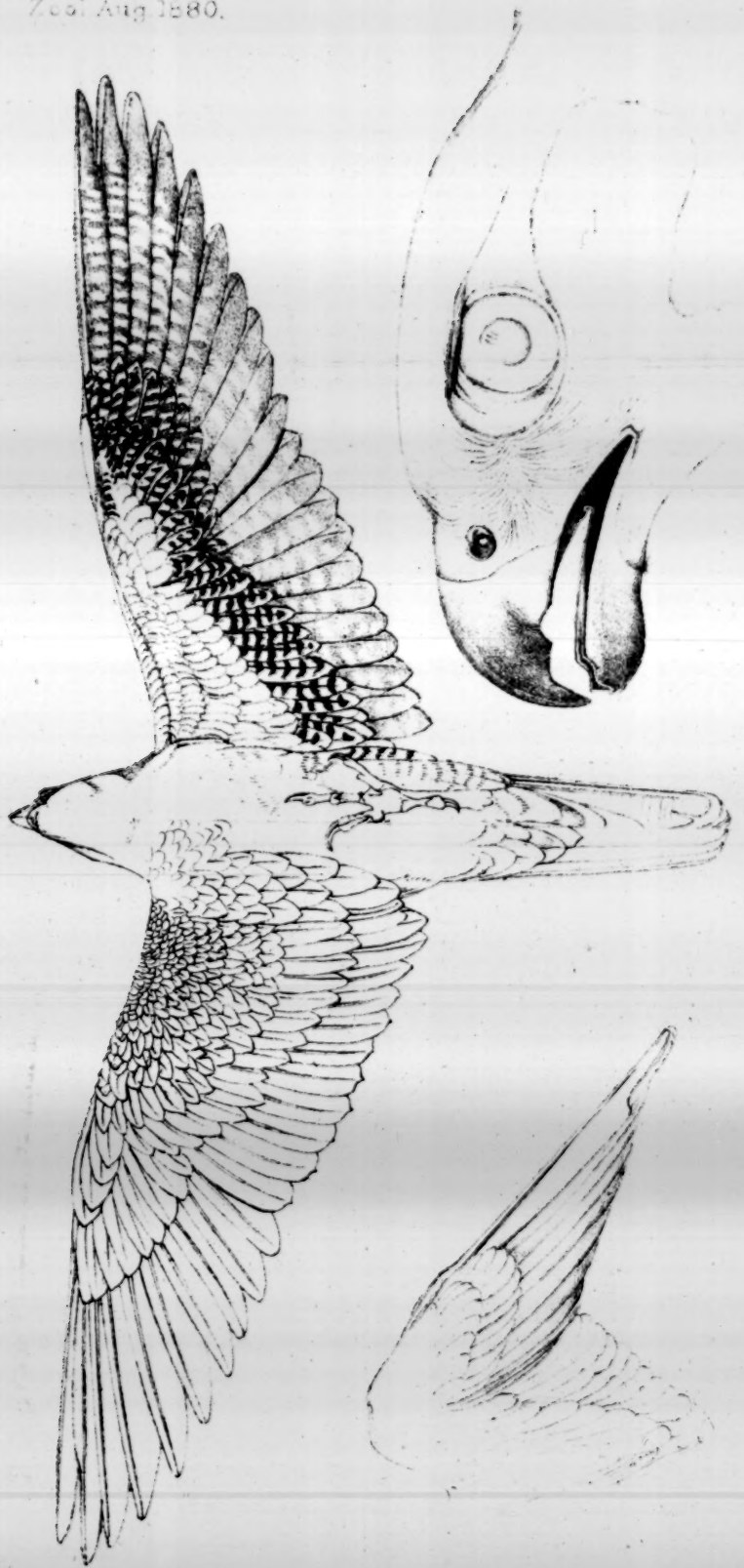
The general result of Dr. Bureau's labours may be characterised as highly satisfactory, and we recommend to our readers the perusal of his instructive memoir in its entirety. We have given above the name of the Paris publisher, and the pamphlet may be doubtless obtained through any bookseller.

Notes of Observations of Injurious Insects. Report, 1879. London: W. Swan Sonnenschein and Allen. 1880.

Two years ago we had occasion to notice the first of these reports, and then expressed our agreeable surprise at the amount of support which this laudable project had received. The report for 1878 was a great improvement on that for 1877, and now in last year's report we have a vast amount of most useful and interesting information. The forty-four pages are full of practical experiences and suggestions for the limitation of those pests of whose presence the farmer and gardener are so well aware.

Miss Ormerod appears to have obtained competent observers in many districts, extending from Orkney to Cornwall, and we are glad to see one or two Irish notices. The important information elicited from many Scottish foresters is quite a feature in this year's report. We should like to give our readers a short extract as a sample of the kind of information contributed, but there are so many which commend themselves that we must forbear to select. Our only wish is that all interested in the attacks of injurious insects will study the pamphlet for themselves, and we can safely say that Miss Ormerod will be very glad either to give or receive any information on this subject. Thirty-two destructive species are selected for special observation. Good figures and descriptions are given of most of these.

Zool. Aug 1880.



W. Wolf del.

W. Wolf sculp.